

What is claimed is:

- Sub A27
1. An interference canceller device for a DS-CDMA communication system including low-rate channels and high-rate channels, comprising:
 - an interference replicating unit being associated with the high-rate channels
 - 5 for creating interference replicas from received signals; and
 - an adder for subtracting the interference replicas from the received signals.
 2. The device of claim 1, which further includes a delay circuit for delaying the received signals to the adder.
 - 10 3. The device of claim 1, wherein the interference replicating unit includes a despread processing part.
 - 15 4. The device of claim 3, which further includes a searcher for detecting different paths based on a delay profile of the received signals and allocating the despread processing part of the interference replicating unit to the paths detected.
 - 20 5. The device of claim 4, wherein the searcher includes a memory for storing a threshold value for detecting paths of the low-rate channels, a path detection unit for detecting paths of the high-rate channels based on the threshold value stored and then allocating the despread processing parts of the interference replicating unit to the paths detected.

6. A radio communication device for a DS-CDMA communication system including low-rate channels and high-rate channels, comprising:

an interference canceller including an interference replicating unit being associated with the high-rate channels for creating interference replicas from received signals and an adder for subtracting the interference replicas from the received signals producing interference-eliminated signals; and

a receiver for performing demodulation on the interference-eliminated signals.

7. The device of claim 6, which further includes a delay circuit for delaying the received signals to the adder.

8. The device of claim 6, wherein the interference replicating unit includes a despread processing part.

9. The device of claim 8, which further includes a searcher for detecting different paths based on a delay profile of the received signals and allocating the despread processing part of the interference replicating unit to the paths detected.

10. The device of claim 9, wherein the searcher includes a memory for storing a threshold value for detecting paths of the low-rate channels, a path detection unit for detecting paths of the high-rate channels based on the threshold value stored and then

allocating the despread processing parts of the interference replicating unit to the paths detected.

11. An interference cancelling method for a DS-CDMA communication system
5 including low-rate channels and high-rate channels, the method comprising the steps of:
creating interference replicas from received signals for the high-rate
channels; and
subtracting the interference replicas from the received signals for the high
rate channels producing interference-eliminated signals.

10 12. The method of claim 11, which further includes delaying the received signals
before subtracting the interference replicas.

13. The method of claim 11, which further includes demodulating the interference-
15 eliminated signals.

14. An interference replicating unit for a DS-CDMA communication system
including a multi-array antenna, comprising:
a plurality of despreading parts for despreading signals received from the
20 multi-array antenna producing despread signals;
a decision part coupled to the despreading parts for providing decision
output signals; and

a plurality of resspreading parts, coupled to the decision part for resspreading the decision output signals.

15. A path searcher for a DS-CDMA communication system including low-rate
5 channels and high-rate channels, comprising:

a memory for storing a delay profile for the low-rate channels and a delay profile for the high-rate channels;

path detection part for setting a first threshold and selecting paths in the delay profile for the low-rate channels exceeding the first threshold;

10 a second memory for storing the first threshold; and

the path selection part for selecting paths in the delay profile for the high-rate channels exceeding the first threshold.

16. The searcher of claim 15, wherein the path selection part further sets a
15 second threshold and selects paths in the delay profile for the high-rate channels exceeding the second threshold.

17. A path searching method for a DS-CDMA communication system including low-rate channels and high-rate channels, the method comprising the steps of:

20 storing a delay profile for the low-rate channels and a delay profile for the high-rate channels;

setting a first threshold and selecting paths in the delay profile for the low-rate channels exceeding the first threshold;

